In the Claims

1(Cancelled).

2(Cancelled).

3(Cancelled).

4(Cancelled).

5(Cancelled).

6(Cancelled).

7(Cancelled).

8(Cancelled).

9(Cancelled).

10(Cancelled).

11(Cancelled).

12(Cancelled).

13(Cancelled).

14(Cancelled).

15(Cancelled).

16(Cancelled).

17(Cancelled).

18(Cancelled).

19(Cancelled).

20(Cancelled).

21(New).   A multiple channel system for a twisted pair telephone wire local loop system, comprising:

a subscriber gateway system having an n-channel transceiver connected to the twisted pair telephone wire, the n-channel transceiver sending and receiving multiple independent channels, wherein the n-channel transceiver has a plurality of digital demodulators;

an n-channel transceiver at a central office connected to the twisted pair telephone wire, the n-channel transceiver sending and receiving multiple independent channels wherein n is greater than two; and

a local circuit switch connected to an output of the n-channel transceiver at the central office.

22(New).   The system of claim 21, further including a digital subscriber line access multiplexer connected to the output of the n-channel receiver at the central office.

23(New).   The system of claim 21, wherein the plurality of digital modulators are coupled to a plurality of digital filters.

24(New).   The system of claim 23, wherein each of the outputs of the plurality of digital filters is summed by a summer.

25(New).   The system of claim 23, wherein the plurality of digital modulators are implemented in a digital signal processor.

26(New).   The system of claim 21, wherein the plurality of digital modulators are implemented in a digital signal processor.

27(New). A method of operating a bandwidth allocation system for a twisted pair telephone wire local loop system, comprising the steps of:

(a) receiving a bandwidth allocation request at an office controller;

(b) selecting an unused section of frequency;

(c) determining if the unused section of frequency has sufficient bandwidth;

(d) when the unused section of frequency has sufficient bandwidth, performing a link quality analysis; and

(e) when the link quality analysis is greater than a predetermined minimum, defining the unused section of frequency as available.

28(New) The method of claim 27, further including the steps of:

(f) when the frequency band is available, determining a filter scheme and a frequency translation scheme;

(g) transmitting the filter scheme and the frequency translation scheme to a subscriber controller over a control channel;

(h) sending a bandwidth allocation available message by the office controller.

29(New). A bandwidth allocation system for a twisted pair telephone wire local loop system, comprising:

a subscriber digital filter system connected to the twisted pair telephone wire;

an office digital filter system connected to the twisted pair telephone wire; and

an office controller sending a control signal to the office digital filter system, wherein the office controller receives a bandwidth allocation request and calculates a digital filter coefficients necessary to realize a digital filter to satisfy the bandwidth allocation request.

30(New) The system of claim 29, further including:

a subscriber controller sending a control signal to the subscriber digital filter system.

31(New). The system of claim 30, wherein the office controller transmits the digital filter coefficients to the subscriber controller over a control channel.

32(New). The system of claim 29, further including a subscriber transceiver coupled to the subscriber controller and the subscriber filter system.